



1 OF 6

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Substitute for form 1449/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 1 of 6

Complete if Known

Application Number 10/763,346

Filing Date 1/23/2004

First Named Inventor Eric S. Olson

Art Unit

Examiner Name

Attorney Docket Number TCOM0018

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
llk	01	US- 6,574,270 B1	06-03-2003	Madkour et al	all
	02	US- 5,615,209 A	03-25-1997	Bottomley	all
	03	US- 6,567,462 B1	05-20-2003	Brunner et al	all
	04	US- 6,442,130 B1	08-27-2002	Jones, IV et al	all
	05	US- 5,787,130	07-28-1998	Kotzin et al.	all
	06	US- 5,872,540	02-16-1999	Casabona et al.	all
	07	US- 5,872,776	02-16-1999	Yang	all
	08	US- 5,930,229	07-27-1999	Yoshida et al.	all
	09	US- 5,953,369	09-14-1999	Suzuki	all
	10	US- 5,995,499	11-30-1999	Hottinen et al.	all
	11	US- 6,002,727	12-14-1999	Uesugi	all
	12	US- 6,014,373	01-11-2000	Schilling et al.	all
	13	US- 6,018,317	01-25-2000	Dogan et al.	all
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	15	US- 6,115,409	09-05-2000	Upadhyay et al.	all
	16	US- 6,127,973	10-03-2000	Choi et al.	all
	17	US- 6,131,013	10-10-2000	Bergstrom et al.	all
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llk	19	US- 6,141,332	10-31-2000	Lavean	all

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		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
llk	A6	EP 0558910 A1		Blaupunkt-Werke		
llk	A7	EP 0610989 A2		Phillips Patent		
llk	A8	JP 7-74687		Unknown		
llk	A9	DE 4201439 A1		Daimler-Benz		

Examiner
Signature

KHAI TRAN

Date
Considered

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		Art Unit	
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Sheet 2 of 6	Attorney Docket Number	TCOM0018	

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llk	20	US- 6,154,443	11-28-2000	Huang et al.	all
	21	US- 6,157,685	12-05-2000	Tanaka et al	all
	22	US- 6,157,847	12-05-2000	Buehrer et al	all
	23	US- 6,166,690	12-26-2000	Lin et al.	all
	24	US- 6,172,969	01-09-2001	Kawakami et al.	all
	25	US- 6,175,587	01-16-2001	Madhow et al.	all
	26	US- 6,192,067	02-20-2001	Toda et al.	all
	27	US- 6,201,799	03-13-2001	Huang et al.	all
	28	US- 6,215,812	04-10-2001	Young et al.	all
	29	US- 6,222,828	04-24-2001	Ohlson et al.	all
	30	US- 6,230,180	05-08-2001	Mohamed	all
	31	US- 6,233,229	05-15-2001	Ranta et al.	all
	32	US- 6,256,336	07-03-2001	Rademacher et al.	all
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	34	US- 6,278,726	08-21-2001	Mesecher et al.	all
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llk	A1	DE 4326843 A1	02-16-1995	Richard Hirschm	all	
	A2	DE 4343959 A1	06-29-1995	Richard Hirschm	all	
	A3	WO 93/12590	06-24-1995	Array-Comm, Inc	all	
	A4	GB 2280575 A	02-01-1995	Roke Manor Rese	all	
llk	A5	JP2000-13360A	01-14-2000	NEC Corp.	all	

Examiner Signature	KHAI TRAN	Date Considered	12/29/05
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llt	39	US- 6,324,159	11-27-2001	Mennekens et al.	all
	40	US- 6,377,636	04-23-2002	Paulraj et al.	all
	41	US- 6,430,216	08-06-2002	Kober et al.	all
	42	US- 6,459,693	10-01-2002	Park et al.	all
	43	US- 6,032,056	02-29-2000	Reudink	all
	44	US- 5,978,413	11-02-1999	Bender	all
	45	US- 6,078,611	06-20-2000	La Rosa et al.	all
	46	US- 6,269,075 B1	07-31-2001	Tran	all
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	48	US- 20010003443	06-14-2001	Velazquez et al.	all
	49	US- 20010020912	09-13-2001	Naruse et al.	all
	50	US- 20010021646	09-13-2001	Antonucci et al.	all
	51	US- 20010046266	11-29-2001	Rakib et al.	all
	52	US- 20020001299	01-23-2002	Petch et al.	all
llt	53	US- 20020172173	11-21-2002	Schilling et al.	all
	54	US- 20030053526	03-20-2003	Reznik	all
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NON PATENT LITERATURE DOCUMENTS			
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llt	B0	ILTIS, Multiuser Detection of Quasisynchronous CDMA Signals Using Linear Decorrelators, IEEE Transactions on Communications, Nov. 1996, Vol. 44, No. 11	
	B1	RAPPAPORT, Wireless Communications - Principles & Practice, 1996, pgs. 518-533, Prentice Hall, Upper Saddle River, NJ, US	
	B2	SCHARF, ET AL., Matched Subspace Detectors, IEEE Transactions on Signal Processing, Aug. 1994, Vol. 42, No. 8.	
	B3	PRICE ET AL., A Communication Technique for Multipath Channels, Proceedings to the IRE, 1958, Vol. 46, The Institute of Radio Engineers, New York, NY, US	
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	B6	XIE ET AL., A family of Suboptimum Detectors for Coherent Multiuser Communications, IEEE Journal on Selected Areas in Communications, May 1990, Vol. 8, No. 4	
	B7	VITERBI, Very Low Rate Convolutional Codes for Maximum Theoretical Performance of Spread Spectrum Multiple-Access Channels, IEEE Journal on Selected Areas in Communications,	
	B8	VITERBI, CDMA - Principles of Spread Spectrum Communication, 1995, pgs. 11-75 and 179-233, Addison-Wesley, Reading, MA, US	
llt	B9	VERDU, Minimum Probability of Error for Asynchronous Gaussian Multiple-Access Channels, IEEE Transactions on Information Theory, Jan. 1986, Vol. IT-32, No. 1	

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elt	C0	KAPLAN, Understanding GPS - Principles and Applications, 1996, pgs. 83-236, Artech House, Norwood, MA, US	
	C1	SCHARF, Statistical Signal Processing - Detection, Estimation, and Time Series Analysis, 1990, pgs. 23-75 and 103-178, Addison-Wesley, Reading, MA, US	
	C2	STIMSON, Introduction to Airborne Radar 2nd edition, 1998, pgs. 163-176 and 473-491, SciTech Publishing, Mendham, NJ, US	
	C3	BEHRENS ET AL., Signal Processing Applications of Oblique Projection Operators, IEEE Transactions on Signal Processing, Jun. 1994, Vol. 42, No. 6	
	C4	ALEXANDER ET AL., A Linear Receiver for Coded Multiuser CDMA, IEEE Transactions on Communications, May 1997, Vol. 45, No. 5	
	C5	SCHLEGEL ET AL., Multiuser Projection Receivers, IEEE Journal on Selected Areas in Communications, Oct. 1996, Vol. 14, No. 8	
	C6	HALPER ET AL., Digital-to-Analog Conversion by Pulse-Count Modulation Methods, IEEE Transactions on Instrumentation and Measurement, Aug. 1996, Vol. 45, No. 4	
	C7	ORTEGA ET AL., Analog to Digital and Digital to Analog Conversion Based on Stochastic Logic, IEEE 0-7803-3026-9/95, 1995	
	C8	FRANKEL ET AL., High-performance photonic analogue digital converter, Electronic Letters, Dec. 4, 1997, Vol. 33, No. 25	
elt	C9	LIN ET AL., Digital Filters for High Performance Audio Delta-sigma Analog-to-digital and Digital-to-analog Conversions, Proceedings of ICSP, Crystal Semiconductor Corporation,	

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elt	D0	THOMAS, Thesis for the Doctor of Philosophy Degree, UMI Dissertation Services, Jun. 1996, Ann Arbor, MI, US	
	D1	SCHLEGEL ET AL., Projection Receiver: A New Efficient Multi-User Detector, IEEE, 1995, 0-7803-2509-5/95	
	D2	BEHRENS, Subspace Signal Processing in Structured Noise, UMI Dissertation Services, Jun. 1990, Ann Arbor, MI, US	
elt	D3	SOFIENE ET AL., Interference Subspace Rejection: A Framework for Multiuser Detection in Wideband CDMA, IEEE Journal on Selected Areas in Communications, Feb. 2002, Vol. 20, No	

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